

REMARKS

This Amendment responds to the Office Action dated October 23, 2006 in which the Examiner rejected claim 6 under 35 U.S.C. §103 and objected to claim 8 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Applicants respectfully request the Examiner acknowledge receipt of the priority documents from the International Bureau. Applicants note that Box 12c (i.e., none) was indicated. Applicants respectfully submit that Box 12a (i.e., all) should be indicated instead.

As indicated above, claim 6 has been amended to make explicit what is implicit in the claims. The amendment is unrelated to a statutory requirement for patentability.

Claim 6 claims a multi-wire saw for cutting a silicon ingot while supplying a slurry containing abrasive grains and an alkali or a mixed acid to a wire traveling between a plurality of rollers comprises a slurry supply mechanism and a holding portion. The slurry supply mechanism has an holding portion for holding the slurry and a temperature control mechanism for keeping the temperature of the slurry constant. The slurry supply mechanism, which is adapted to supply the slurry to the wire as the wire passes through the holding portion, is provided on an upstream side of a site where the silicon ingot is cut. The surface constituting the holding portion is provided with a passage hole allowing the wire to pass therethrough.

Through the structure of the claimed invention having a) a slurry supply mechanism holding a slurry of abrasive grains and an alkali or a mixed acid and b) a holding portion provided on an upstream side of a site where a silicon ingot is cut as

claimed in claim 6, the claimed invention provides a multi-wire saw in which the appropriate amount of slurry adheres to the wires. The prior art does not show, teach or suggest the invention as claimed in claim 6.

Claim 6 was rejected under 35 U.S.C. §103 as being unpatentable over *Yamada et al.* (U.S. Patent 6,832,606).

Yamada et al. appears to disclose the wire saw 1 includes a pair of main rolls 11, 12 disposed on right and left sides of a vessel 10 to which an abrasive liquid a is supplied and a drive roll 13 disposed below the vessel 10. A wire 15 is wound on these main rolls 11, 12 and the drive roll 13 several times so that the wire 15 repeatedly moves back and forth in accordance with the rotation of these main rolls 11, 12 and the drive roll 13. (Column 3, lines 8-14). As shown in FIG. 3, the vessel 10 is so shaped that an upper surface thereof is open and four side surfaces 20, 21, 22, 23 and a bottom surface 24 thereof are closed. Supply ports 25 for supplying the abrasive liquid a therethrough are formed in the front and rear side surfaces 20, 22, and the abrasive liquid a continuously supplied into the vessel 10 from the supply ports 25 flows out from the upper surface opening of the vessel 10 continuously. The abrasive liquid is prepared by abrasive grains of silicon carbide, alumina and diamond in oil. (Column 3, lines 39-49). In the wire saw 1 as structured above, the abrasive liquid a is supplied continuously into the vessel 10 from the supply ports 25, the abrasive liquid a is caused to flow out continuously over the upper ends 21', 23' of the right and left side surfaces 21, 23 in the upper surface opening of the vessel 10 to the right and left outside areas of the vessel 10. Then, the wires 15 hung between the main rolls 11, 12 in parallel to one another at the predetermined regular intervals are moved back and forth while positioned lower than the liquid level a' of

the abrasive liquid a which is formed in the upper surface opening of the vessel 10 (in other words, while the supply amount of the abrasive liquid a which is supplied continuously into the vessel 10 from the supply ports 25 is so adjusted that the wires 15 are under the liquid level a' of the abrasive liquid a). Then, the work W is lowered by the operation of the raising/lowering mechanism 30 so that the lower surface side of the work W is pressed onto the wires 15 from the above which move between the main rolls 11, 12 while kept parallel to one another at the regular spaced intervals. Thereby, the work W can be cut into a large number of thin plates. (Column 4, lines 45-65). The work W is made of a sintered rare earth alloy.

Thus, *Yamada et al.* merely discloses an abrasive liquid of abrasive grains of silicon carbide, alumina and diamond in oil and a workpiece of sintered rare earth magnetic alloy. Nothing in *Yamada et al.* shows, teaches or suggests cutting a silicon ingot with a slurry containing abrasive grains and an alkali or a mixed acid as claimed in claim 6. Rather, *Yamada et al.* merely discloses a work made of sintered rare earth alloy and an abrasive liquid of abrasive grains of silicon carbide, alumina and diamond in oil.

Furthermore, *Yamada et al.* merely discloses a steel wire for cutting a work while dipping the work in an abrasive liquid. However, in the claimed invention, a slurry containing alkali or a mixed acid is used and reacts the silicon ingot. Nothing in *Yamada et al.* shows, teaches or suggests the slurry reacting with the workpiece.

Also, *Yamada et al.* merely discloses lowering a workpiece of sintered rare earth alloy to press the workpiece onto the wires from above the vessel 10 (column 4, lines 45-65). Nothing in *Yamada et al.* shows, teaches or suggests a holding portion is provided on an upstream side of the site where the silicon ingot is cut as

claimed in claim 6. Rather, *Yamada et al.* clearly teaches away from the claimed invention since the vessel 10 is provided directly beneath the workpiece which is dunked therein.

Applicants respectfully traverse the Examiner's statement that it would be obvious to provide the holding portion upstream of the cutting site. *Yamada et al.* provides no motivation for such a modification. Also, *Yamada et al.* places the workpiece inside the vessel 10 when cutting the workpiece, which is contrary to providing the vessel/holding portion upstream of the cutting site. Furthermore, Applicants respectfully traverse the Examiner's statement that the Applicants have not provided an advantage. Applicants respectfully bring the Examiner's attention to paragraph [0074].

Since nothing in *Yamada et al.* shows, teaches or suggests a) a slurry supply mechanism holding of abrasive grains and an alkali or a mixed acid and b) providing a holding portion provided on an upstream side of a site where a silicon ingot is cut as claimed in claim 6, Applicants respectfully request the Examiner withdraws the rejection to claim 6 under 35 U.S.C. §103.

Since objected to claim 8 depends from an allowable claim, Applicants respectfully request the Examiner withdraws the objection thereto.

New claims 9-11 have been added and recite additional features. Applicants respectfully submit that these claims are also in condition for allowance.

The prior art of record, which is not relied upon, is acknowledged. The references taken singularly or in combination do not anticipate or make obvious the claimed invention.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is requested to contact, by telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, Applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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